Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
R/L DBS Company, LLC.	)	
	)	
Application for Minor Modification to Direct Broadcast Satellite Authorization, for Issuance of Authority to Launch, and for Authority to Operate Rainbow 1 (USABBS-17)	)	File No. SAT-MOD-20020408-00062
	)	
Application for Extension of Launch Milestone for Rainbow 1 (USABSS-17)	)	File No. SAT-MOD-2003110-00009

ORDER AND AUTHORIZATION

Adopted: April 21, 2003 **Released:** April 22, 2003

By the Chief, Satellite Division:

INTRODUCTION

1. By this Order, we grant R/L DBS Company, LLC (R/L DBS) authority to make minor modifications to its Direct Broadcast Satellite (DBS) construction permit at the 61.5° W.L. orbit location and specify the operation of Rainbow 1 as a spot beam satellite. We also grant R/L DBS authority to launch and to operate its Rainbow 1 satellite at the 61.5° W.L. orbit location on the channels previously authorized. In addition, we grant R/L DBS an extension of its launch milestone from March 29, 2003 to August 31, 2003, and likewise extend the attendant milestones for shipping the spacecraft to the launch site and for final testing of the spacecraft.

BACKGROUND

2. In August 1989, the Commission granted Continental Satellite Corporation (Continental), R/L DBS's predecessor in interest, a construction permit for a DBS satellite system subject to, *inter alia*, the requirement that Continental proceed with construction of its system with "due diligence" as defined by relevant Commission rules.[1] Under the "due diligence" requirements, a DBS construction permittee was to (1) begin construction or complete contracting for construction of its satellite(s) within one year of the grant of its construction permit and (2) have its DBS system in operation within six years of the grant of its construction permit, unless otherwise determined by the Commission upon proper showing.[2] In August

[1] *See Applications of Continental Satellite Corporation, et. al*., Memorandum Opinion and Order, FCC 89-257, 4 FCC Rcd 6292, 6300 (1989).

[2] The relevant due diligence requirements at that time were set forth in Section 100.19 (a), (b) and (c) of the Commission rules (47 C.F.R. §100.19(a),(b) and (c)).

1995, the Bureau found that Continental had met the first prong of the due diligence requirements and assigned eleven DBS channels to Continental at both the 166º W.L. and 61.5º W.L. orbit locations.[3] The Bureau's assignment of channels and orbital locations at that time, however, did not include launch or operational authority.[4] In November 1995, the Bureau granted Continental a four-year extension of the date on which it was required to commence service, acknowledging that the government's delay in assigning channels to Continental had made it difficult for the company to proceed with the construction of its satellite.[5]

3. In 1997, Continental was granted authority to assign its authorizations to R/L DBS.[6] Approximately one year later, R/L DBS voluntarily surrendered the channels at the 166° W.L. location.[7] Subsequently, on December 29, 2000, the Bureau granted R/L DBS a 36-month extension of its construction permit for its satellite at the 61.5° W.L. orbit location.[8] Pursuant to that extension, R/L DBS's construction permit was extended until December 29, 2003, subject to the condition that R/L DBS (1) launch the satellite and begin providing service to customers by that date and (2) provide original or regional programming to each area served by an R/L DBS spot beam.[9] In addition, R/L DBS is required to meet strict interim milestones for constructing and launching the satellite and commencing operations, and to provide verification that the interim milestones are met.[10] Finally, the Bureau noted that R/L DBS was incorporating recent technological advances into its system design and reminded R/L DBS that it would be necessary for R/L DBS to request authority to modify its satellite design within the 36-month extension period.[11]

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3 *See Application of Continental Satellite Corp. For Assignment of Direct Broadcast Satellite Orbital Positions and Channels, and For Consent to Transfer of Control to Loral Aerospace Holdings, Inc.,* Memorandum Opinion and Order, DA 95-1773, 10 FCC Rcd 10473 (Int'l Bur. 1995) (*Continental Satellite Corp. Assignment Order*).

4 *Id.* at 10479. The Commission stated that "[a]n instrument of authorization, including launch authority, will be issued upon submission of updated technical information and a finding that the information assures compliance with international treaties and agreements."

5 *See Application of Continental Satellite Corporation For Extension of Construction Permit*, Memorandum Opinion and Order, DA 95-2347, 11 FCC Rcd 1157 (1995).

6 *See Loral Corporation Request For a Declaratory Ruling Concerning Section 310(b)(4) of the Communications Act of 1934, and Application of R/L DBS Company For Assignment of Continental Satellite Corporation's Direct Broadcast Satellite Construction Permit,* DA 97-725, 12 FCC Rcd 21164 (Int'l Bur. 1997).

7 *See* Public Notice, International *Bureau* Satellite Policy Branch, Report No. SPB-138a, DA 98-1869 (rel. Sept. 15, 1998), 13 FCC Rcd 17892 (1998).

8 *See Petition of R/L DBS Company, L.L.C. For Extension of Its Direct Broadcast Satellite Construction Permit,* Memorandum Opinion and Order, DA 00-2852, 16 FCC Rcd 9 (Int'l Bur. 2000) (*R/L DBS Extension Order*).

9 *Id*. at 18. A separate instrument of authorization, including launch authority, however, was not issued as previously stated in the initial authorization to Continental. *See supra*. note 4.

10 *Id*. at 16-18.

11 *Id.* at 16.

4. On April 8, 2002, R/L DBS filed the above captioned application seeking authority to modify its DBS construction permit at the 61.5° W.L. orbital location to specify the operation of Rainbow 1 as a spot beam satellite. In addition, noting that there is no indication that the Commission ever issued a separate finding granting the launch authority for which Continental had applied, R/L DBS requests such launch authority, and also seeks a license to operate Rainbow 1 at the 61.5° W.L. orbital location (*Modification, Launch & Operation Application*).[12] On January 10, 2003, R/L DBS filed an application to extend the interim milestone date for launching the satellite from March 29, 2003 to May 31, 2003 (*Milestone Extension Request*).[13] On March 14, 2003, R/L DBS amended its *Milestone Extension Request* seeking a further extension of the interim launch milestone date until August 31, 2003, as well as the milestone dates for shipping the satellite to the launch site and for final testing (*Amended Milestone Extension Request*).[14] All of the applications are unopposed.

DISCUSSION

A. Modification, Launch & Operation Application

5. In its *Modification, Launch & Operation Application*, R/L DBS states that its DBS satellite, Rainbow 1, is currently being constructed by Lockheed Martin Corporation (Lockheed Martin) and is one of Lockheed Martin's A2100 class satellites. According to R/L DBS, the satellite is designed to carry the 11 channels assigned to it plus two additional unassigned channels at the 61.5° W.L. orbital location.[15] R/L DBS further states that Rainbow 1 will deploy antennas that will enable it to transmit on most, if not all, of the assigned frequencies into a beam that serves the continental United States (CONUS) or into one or more of 22 spot beams.[16] R/L DBS submits that by combining programming on the CONUS beam with local and regional programming in the spot beams, it will be able to provide a "differential" DBS service to American viewers.[17] Accordingly, R/L DBS requests approval of its design change to incorporate the spot beam technology.

6. The Commission often receives requests from licensees to modify the technical design of their satellites while they are being constructed. In recognition of the several years required to construct a

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12 Application of R/L DBS Company, LLC for Minor Modification to Direct Broadcast Satellite Authorization, for Issuance of Authority to Launch and for Authority to Operate Rainbow 1 (USABBS-17), File No. SAT-MOD-20020408-00062 (filed Apr. 8, 2002).

13 Application of R/L DBS Company, LLC for Minor Modification to Direct Broadcast Satellite Authorization, for Extension of Launch Milestone for Rainbow 1 (USABSS-17), File No. SAT-MOD-2003110-00009 (filed Jan. 10, 2003).

14 Application of R/L DBS Company, LLC for Minor Modification to Direct Broadcast Satellite Authorization, for Extension of Launch Milestone for Rainbow 1 (USABSS-17), File No. SAT-MOD-2003110-00009 (filed Mar. 14, 2003).

15 *Id.* at 4. R/L DBS states, however, that it will not activate the two unassigned channels unless and until it receives appropriate authority to do so.

16 *Id*. R/L DBS states that although one beam of the spacecraft covers CONUS, the receive antenna elevation angles in certain far western parts of CONUS will be less than 15 degrees.

17 *Id.*

satellite, the rapidly changing technology, and our goal of encouraging more efficient use of the radio spectrum, the Commission has allowed licensees to modify their satellite systems when possible.[18] We have repeatedly recognized that:

> Given the fairly lengthy time period required to construct a satellite, licensees often file requests to modify the technical design of their satellites as they are being built. If the proposed modification does not present any significant interference problems and is otherwise consistent with Commission policies, it is generally granted.[19]

7. Such decisions allow "the licensee to take advantage of the latest technology in providing service to the public."[20] In contrast, however, if the modification application were to present significant interference problems, we would treat the modification as a newly filed application.[21]

8. In considering R/L DBS's request, we evaluated the proposed satellite's interference potential to other DBS licensees and to the radiocommunications systems of other countries. In particular, we looked to determine whether the Rainbow 1 satellite would be operated in accordance with Appendices 30 and 30A of the International Telecommunication Union (ITU) Radio Regulations.[22] Also, if the technical parameters of Rainbow 1 vary from those set forth for U.S. assignments in the Region 2 broadcasting satellite service (BSS) plans and its associated Feeder Link Plan,[23] the Commission must request modification of the Region 2 BSS Plan and its associated Feeder Link Plan for the Rainbow 1 satellite.[24] Annex 1 of Appendices 30 and 30A provide the methodology and criteria for determining whether a proposed satellite system (*i.e.*, a proposed modification to the Plan) might interfere with frequency assignments in accordance with the Region 2 BSS Plan and its associated Feeder Link Plan, other satellite systems, or terrestrial services.[25] If the limits in Annex 1 are exceeded, the system must seek agreement from the appropriate entities of the affected systems or services.

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18 *See, e.g., In the Matter of* Teledesic *LLC for Minor Modification of License to Construct, Launch and Operate a Non-Geostationary Fixed Satellite Service System*, Order and Authorization, DA 99-267, 14 FCC Rcd 2261, 2263-64(Int'l Bur. 1999).

19 *Id., citing GTE Spacenet Corp.* 5 FCC Rcd. 4112, 4112 (Com. Car. Bur.1990); *American Satellite Company,* 5 FCC Rcd. 1186, 1186 (Com. Car. Bur. 1990); and *Hughes Communications Galaxy, Inc.*, 5 FCC Rcd. 1653 (Com. Car. Bur. 1990).

20 *Id., citing American Satellite Company,* 5 FCC Rcd. 1186, 1186 (1990).

21 *Id., citing Geostar Positioning Corporation*, 6 FCC Rcd. 2276 (Com. Car. Bur. 1991).

22 *See* ITU Radio Regulations, Appendices 30 and 30A.

23 The International Telecommunication Union (ITU) Radio Regulations divide the world into three Regions. Generally, Region 1 includes Africa, Europe, Northern and Western portions of Asia; Region 2 includes the Americas and Greenland; and Region 3 includes Southern portions of Asia, Australia and the South Pacific. *See* ITU Radio Regulations Article S5, Section I. Unless referring specifically to the Region 2 BSS Plan and its associated Feeder Link Plan, in the United States the term "DBS" is used interchangeably with "BSS."

24 Some of these varying parameters include type of emission, size of receive dish antennas and the use of spot beams.

25 *See* ITU Radio Regulations, Appendices 30 and 30A.

9. We reviewed the technical and interference analysis submitted by R/L DBS, which was performed in accordance with Appendices 30 and 30A of the ITU Radio Regulations. Based upon our review of R/L DBS's proposed system, we have determined that a request for modification of the Region 2 BSS Plan and its associated Feeder Link Plan is necessary. We have therefore taken steps to request such modification. Based upon the results of the technical and interference analysis, we have sufficient evidence to determine that Rainbow 1 will not cause unacceptable interference to other U.S. DBS systems. We need to seek the agreement of Canada and Mexico and of France for certain EUTELSAT networks, under Section 4.2 of Appendix 30 because the limits of Section 2 of Annex 1 of Appendix 30 are exceeded.[26] Accordingly, we have forwarded R/L DBS's technical analysis to the ITU for its review.[27]

10. We find that, subject to the ITU review and agreement process with other administrations, granting R/L DBS's request to modify its DBS construction permit to incorporate spot beam technology will serve the public interest by promoting competition and encouraging technological innovation. In our order granting R/L DBS a 36-month extension to bring its DBS system into operation, we noted that R/L DBS had incorporated spot beam technological advances into its system design that improve the quality of its video offerings and the number of channels it can offer to consumers.[28] We stated that the use of spot beam technology would allow R/L DBS to use, to its best advantage, the geographic limitation of its satellite and permit R/L DBS to market regional programming to video markets in the eastern United States.[29] We also noted that R/L DBS would be obliged to obtain authority to modify its satellite design within the extension period.[30] R/L DBS is seeking such authority in the instant application. Thus, subject to appropriate ITU review and agreement seeking requirements, we grant R/L DBS's proposed modifications.

11. When the Commission assigned Continental its DBS channels and orbital locations, the Commission stated that it would issue a separate launch and operation authorization upon the submission of updated technical information and a finding that the information assures compliance with international treaties and agreements.[31] R/L DBS, Continental's successor, now seeks such launch authority and seeks a license to operate the Rainbow 1 satellite at the 61.5° W.L. orbital location. Based on our review of R/L DBS's technical submission, we grant R/L DBS's request for authority to launch and to operate the Rainbow 1 satellite at the 61.5° W.L. orbital location. As we noted above, however, we need to seek agreement from Canada and Mexico and France for certain EUTELSAT satellites. Thus, we remind R/L DBS that its satellite operations are not guaranteed protection from interference from systems licensed by other Administrations operating in accordance with the ITU Radio Regulations unless and until the Region 2 BSS Plan and its associated Feeder Link Plan are modified to include the technical parameters of Rainbow 1. Further, we condition operation of Rainbow 1, such that, until the Region 2 BSS Plan and its associated Feeder Link Plan are modified to include Rainbow 1's parameters, it shall not cause greater interference than that which would occur from the current USA BSS and Feeder Link Plan assignments at 61.5° W.L. to other BSS or feeder link assignments, or other services or satellite systems, operating in accordance with the ITU Radio Regulations.

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26 *Id.*

27 The ITU review is pending.

28 *Id.*

29 *Id*.

30 *Id.* at 16.

31 *See Continental Satellite Corp. Assignment Order,* 10 FCC Rcd at 10479.

B. Amended Milestone Extension Request

12. As mentioned above, in granting R/L DBS a 36-month extension of its DBS construction permit, the Bureau required that R/L DBS meet specific interim milestones and provide verification that it had met the interim milestones.[32] These interim milestones included various steps and actions that R/L DBS was to complete within a specified time frame of 6, 12, 18, 24, and 27 months. At this time, three interim milestones remain. Specifically, at the end of the 27th month, March 29, 2003, R/L DBS is required to complete final testing, ship the satellite to the launch site, and launch the satellite.[33]

13. In its initial *Milestone Extension Request*, R/L DBS requested an extension of the March 29, 2003 milestone to launch its satellite to May 31, 2003. R/L DBS subsequently filed an *Amended Milestone Extension Request* seeking authority to extend the launch milestone date to August 31, 2003. In addition, in its *Amended Milestone Extension Request*, R/L DBS requests an extension of the related milestone dates for final testing and shipment to launch site to August 31, 2003.

14. In the initial *Milestone Extension Request*, R/L DBS submitted that the extension was necessary and solely due to circumstances that were both unforeseen and beyond its control.[34] According to R/L DBS, these circumstances concern Lockheed Martin Commercial Space Systems' Atlas V launch vehicle program that will to be used to launch Rainbow 1. R/L DBS explained that Lockheed Martin informed it that the Rainbow 1 launch needed to be rescheduled from March 29, 2003 to early May 2003 because of three factors: a scheduled shutdown of the launch range by the U.S. Air Force; a delay in the delivery of the spacecraft manifested on an Atlas V launch vehicle immediately preceding the launch of Rainbow 1; and on-going Atlas V qualifications activities. In view of these factors and based on Lockheed Martin's then projected launch pad turn around schedule, R/L DBS informed us in its initial *Milestone Extension Request*, that Lockheed Martin had reserved the range facility from May 8-10 for the Rainbow 1 launch.[35] Notwithstanding Lockheed Martin's assurance of a timely launch, R/L DBS, in what it identified as an abundance of caution, asked that the extension of the launch milestone be up to and including May 31, 2003.[36]

15. In its *Amended Milestone* Extension *Request*, R/L DBS informs us that Lockheed Martin recently discovered certain anomalies with spot welds in the Atlas V series rocket tank subassembly, which led Lockheed Martin to examine several tanks that had been designated for specific launch vehicles.[37] Through this examination, Lockheed Martin discovered that the defect is present on the AV003 vehicle designated for the Rainbow 1 launch. The same defect is present on the AV002 vehicle, which is scheduled to launch immediately preceding the Rainbow 1 launch. In view of these discoveries, R/L DBS states that a series of evaluations were affected and revised Initial Launch Capability (ILC) dates were established. The final outcome resulted in delaying the AV002 launch from March until May 2003, and based on Lockheed Martin's currently projected launch pad turn around schedule, thus results in a July 2003 date for launch of the Rainbow 1 satellite on AV003. Because of this, and in order to

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32 *See R/L DBS Extension Order*, 16 FCC Rcd at 16-18.

33 *Id*. at 17.

34 *See Milestone Extension Request* at 2-4.

35 *Id.*

36 *Id.* at 4.

37 *See Amended Milestone Extension Request* at 2-4.

allow for additional, unforeseen changes in the launch schedule and testing, R/L DBS filed an *Amended Milestone Extension Request*, seeking an extension of the milestone launch date to August 31, 2003.[38]

16. R/L DBS also requests that the related shipment to launch site and final testing milestones be extended to August 31, 2003, as well, arguing that it would be prudent to keep the space craft in the factory until shortly before launch. R/L DBS also notes that if the spacecraft were to remain in the factory, Lockheed Martin would be able to use the time to conduct further processing and testing to refine the spacecraft for optimal performance.[39]

17. As a general rule, we grant milestone extensions only when the delay is due to circumstances beyond the control of the licensee.[40] We find that the circumstances presented by R/L DBS justify the brief milestone extension it requests. These are the types of circumstances that the Commission recognized might warrant extending milestones when the Bureau provided R/L DBS with a December 29, 2003 in-service date rather than the March 29, 2003 date R/L DBS had requested.[41] There is no indication that the weld problems Lockheed Martin has recently discovered in its AV002 and AV003 rockets should have been foreseen. More importantly, neither rocket can be safely launched until the anomalies are corrected. It appears that should be accomplished by May 2003, when AV002 is now scheduled to launch.[42] However, because the launch of Rainbow 1 must await the launch of the AV002 rocket and the attendant launch manifest constraints, such as the time required for pre and post flight processing at the launch site, we believe that extending Rainbow 1's milestones to August 31, 2003 is warranted. We also grant R/L DBS's request for extension of the milestones for shipping the satellite to the launch site and for final testing. Extension of these milestones will help to insure a safe and successful launch of the Rainbow 1 satellite, and also serve the public interest by adding a new facilities-based competitor in the DBS service.

ORDERING CLAUSES

18. Accordingly IT IS ORDERED that Application No. SAT-MOD-20020408-00062 IS GRANTED and R/L DBS Company, LLC IS AUTHORIZED to launch and operate a direct broadcast satellite, Rainbow 1 satellite, and locate it at the 61.5° W.L. orbital position in accordance with the terms, representations, and technical specifications set forth in its application..

19. IT IS FURTHER ORDERED that Application File No. SAT-MOD-2003110-00009, as amended, IS GRANTED and the shipment to launch site, final testing, and launch milestone dates of

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38 *Id.*

39 *Id.*

40 Short milestone extensions have been granted to permit licensees to resolve unanticipated technical problems. *See, e.g., INTELSAT LLC* Modification *of Authorization to Launch C-band and Ku-band Satellites the Form a Global Communications System in Geostationary Orbit,* File No. SAT-MOD-20011025-00092, DA 02-333, __ FCC Rcd __ (Sat. Radiocomm. Div., Int'l Bur. 2002); *AMSC Subsidiary Corporation, Application for Modification of Construction Permit and License for the AMSC-1 Satellite,* DA 95-652, 10 FCC Rcd 3791 (Sat. Radiocomm. Div., Int'l Bur. 1995); *American Telephone and Telegraph Company, Application for Modification of Construction Permit and License for the Telstar 402 Satellite,* DA 94-509, 9 FCC Rcd 2607 (Int'l Bur. 1994).

41 *See R/L DBS Extension Order,* 10 FCC Rcd at 13, 16.

42 *See* Letter from Thomas Dowd, Lockheed Martin, to Steve Pontillo, R/L DBS, dated March 11, 2003.

Rainbow 1 ARE EXTENDED from March 29, 2003 to August 31, 2003.

20. IT IS FURTHER ORDERED that, unless extended by the Commission for good cause shown, the R/L DBS Company, LLC authorization shall become NULL AND VOID in the event the space station is not launched and successfully placed into operation on or before December 29, 2003.

21. IT IS FURTHER ORDERED that the authorization granted in this Order is subject to the following conditions: (1) until the International Telecommunication Union (ITU) Region 2 BSS Plan and its associated Feeder Link Plan are modified to include the technical parameters of Rainbow 1 and its associated feeder links, this satellite system shall not cause greater interference than that which would occur from the current U.S. assignments in the Region 2 BSS Plan at 61.5° W.L. to other BSS or feeder link assignments, or other services or satellite systems operating in accordance with the ITU Radio Regulations; and (2) no protection from interference caused by radio stations authorized by other Administrations is guaranteed to Rainbow 1 unless and until Appendices 30 and 30A plan modification procedures are successfully and timely completed.

22. IT IS FURTHER ORDERED that R/L DBS Company, LLC shall coordinate all transfer orbit Telemetry, Tracking, and Control operations with other potentially affected in-orbit DBS or Fixed-Satellite Service operators.

23. IT IS FURTHER ORDERED that this authorization is subject to all other terms and conditions set for the in *R/L DBS* Company*, L.L.C. for Extension of its Direct Broadcast Satellite Construction Permit, File Nos. 87-01, 94-SAT-AL-96, 94-SAT-TC-96, 49-SAT-TC-95, SAT-MOD-1999083*, DA 00-2852, 16 FCC Rcd 9 (Int'l Bur. 2000).

24. This Order is issued pursuant to Section 0.261 of the Commission's rules, 47 C.F.R § 0.261, and is effective upon *release*.

FEDERAL COMMUNICATIONS COMMISION

Thomas S. Tycz
Chief
Satellite Division